

CLAIM AMENDMENTS

1.-19. (canceled)

1. 20. (new) An apparatus for downhole drilling of wells
2 comprising:
3 a drilling unit comprising a drill bit for penetrating
4 into a rock formation,
5 a motor arranged to drive the drill bit;
6 pumping means that causes the drilling fluid to flow from
7 the annulus between the tubing and the inner surface of the bore-
8 hole, and up through the bore of the tubing.

1 21. (new) An apparatus according to claim 20 wherein
2 the motor is an electric motor, and a cable means is disposed along
3 the tubing for energizing said motor.

1 22. (new) An apparatus according to claim 20 wherein
2 the pump means includes a pump disposed downhole.

1 23. (new) An apparatus according to claim 20 wherein
2 the pump is an electric pump, and a cable means is disposed along
3 the tubing for energizing said motor.

1 24. (new) An apparatus according to claim 20 wherein
2 the pump means include at least two pumps disposed downhole at
3 different locations on the tubing.

1 25. (new) An apparatus according to claim 22 wherein
2 the pump means includes a pump disposed in the annulus upon the
3 outer surface of the tubing.

1 26. (new) An apparatus according to claim 22 wherein
2 the pump means includes a pump disposed in the bore of the tubing.

1 27. (new) An apparatus according to claim 20 including
2 motor and drill bit monitoring sensors which monitor the action of
3 the motor and drill bit.

1 28. (new) An apparatus according to claim 20 including
2 directional sensors which monitor the position of the drill bit.

1 29. (new) An apparatus for downhole drilling of wells
2 comprising:

3 a drilling unit comprising a drill bit for penetrating
4 into a rock formation,

5 a motor arranged to drive the drill bit, and

6 pumping means that causes the drilling fluid to flow down
7 through the bore of the tubing, and up through the annulus between
8 the tubing and the inner surface of the borehole,

9 the pump means including a pump disposed downhole.

1 30. (new) An apparatus according to claim 29 wherein
2 the motor is an electric motor, and a cable means is disposed along
3 the tubing for energizing said motor.

1 31. (new) An apparatus according to claim 29 wherein
2 the pump means is an electric pump, and a cable means is disposed
3 along the tubing for energizing said motor.

1 32. (new) An apparatus according to claim 29 wherein
2 the pump means includes a pump disposed in the annulus upon the
3 outer surface of the tubing.

1 33. (new) An apparatus according to claim 29 wherein
2 the pump means includes a pump disposed in the bore of the tubing.

1 34. (new) An apparatus according to claim 29 including
2 motor and drill bit monitoring sensors which monitor the action of
3 the motor and drill bit.

1 35. (new) An apparatus according to claim 29 including
2 directional sensors which monitor the position of the drill bill.

1 36. (new) A method for downhole drilling of wells
2 comprising:
3 advancing a drill bit disposed on a tubing into a bore-
4 hole, the tubing having an inner flowpath there being an annulus

5 between the tubing and the borehole, the inner flowpath and annulus
6 providing a circulation path from the top of the borehole to the
7 drill bit and back to the top of the borehole,

8 driving the drill bit using a motor disposed upon the
9 tubing,

10 supplying the drill bit with drilling fluid through the
11 circulation path,

12 causing said drilling fluid to flow down the annulus and
13 then up the tubing using pump means.

1 37. (new) A method according to claim 36 wherein the
2 pump means includes a pump disposed in the annulus.

1 38. (new) A method according to claim 36 wherein the
2 pump means includes a pump disposed in the bore of the tubing.

1 39. (new) A method according to claim 36 wherein the
2 pump means is an electric pump, and a cable means is disposed along
3 the tubing for energizing said pump.

1 40. (new) A method according to claim 36 wherein the
2 pump means includes at least two pumps disposed downhole at differ-
3 ent locations on the tubing.

1 41. (new) A method according to claim 36 wherein the
2 motor is an electric motor, and a cable means is disposed along the
3 tubing for energizing said motor.

1 42. (new) An apparatus according to claim 36 including
2 motor and drill bit monitoring sensors which monitor the action of
3 the motor and drill bit.

1 43. (new) An apparatus according to claim 36 including
2 directional sensors which monitor the position of the drill bit.

1 44. (new) An apparatus for downhole drilling of wells
2 comprising:
3 a drilling unit comprising a drill bit for penetrating
4 into a rock formation, disposed on tubing,
5 a motor arranged to drive the drill bit,
6 thruster means disposed upon the tubing and which engage
7 with the inner surface of the borehole to urge the tubing down-
8 wards, and
9 a cable means is disposed along the tubing for energizing
10 said thruster means.

1 45. (new) An apparatus according to claim 44 wherein
2 the thruster means include at least two thruster units disposed
3 downhole at different locations on the tubing.

1 46. (new) An apparatus for downhole drilling of wells
2 comprising:
3 a drilling unit comprising a drill bit for penetrating
4 into a rock formation, disposed on tubing,

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5 a motor arranged to drive the drill bit,
6 pumping means that causes the drilling fluid to flow from
7 the annulus between the tubing and the inner surface of the bore
8 hole, and up through the bore of the tubing,
9 formation sensors for determining characteristics of the
10 formation environment disposed upon the tubing, and
11 a cable means disposed along the tubing for energizing
12 said formation sensors.